

MULTI-FREQUENCY PSEUDOLITES FOR CARRIER-BASED DIFFERENTIAL-POSITION DETERMINATION

ABSTRACT OF THE DISCLOSURE

Apparatus and methods for resolving integer ambiguities in position determination. An embodiment of the invention includes a reference system, augmented with multi-frequency pseudolites using a carrier phase differential GPS implementation, and a mobile system. In one embodiment, the components of the reference system includes one or more multi-frequency pseudolites, one or more multi-frequency reference receivers, a data link standing alone or built into the pseudolites, and the associated antennae for each of these elements. The components of the reference system may be stationary. The mobile system may include a multi-frequency receiver and its associated antennae. Because the mobile systems may passively receive information, an unlimited number of mobile systems may be included in any given embodiment of the invention. A multi-frequency pseudolite uses a single frequency source to synthesize all of the multiple carrier frequencies and all of the multiple base band signals modulated onto carrier frequencies for transmission.